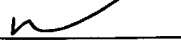


Date: Friday, 6/9/2006 11:32:27 AM
 User: Linda Lacelle

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : X-TUBE MATERIAL
Job Number : 27471	
Estimate Number : 12448	
P.O. Number : N/A	Part Number : D6017115
This Issue : 6/9/2006 S.O. No. : N/A	Drawing Number : D6017 PRELIMINARY
Prsht Rev. : NC	Project Number : N/A
First Issue : N/A Type : PURCHASED PARTS	Drawing Revision : PREL
Previous Run : N/A	Material : N/A
Written By : 	Due Date : 7/27/2006 Qty: 66 Um: Each
Checked & Approved By : _____	
Comment : Est Rev:A New Issue 06-06-09 JLM	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
----------------	------------------------------	----------------------

1.0	PG	PURCHASING
-----	----	------------

**Comment:** PURCHASINGIssue P/O: 1448

a) Description: 4130 Seamless Steel Tube

b) 2.339"OD X2.00" ID X115" Long

c) Tolerance on all dimensions are as per Dwg D6017

d) Material: AISI 4130 (AMS 6371) Seamless tube

Material certification required

u *de-ob-09* *le6*

2.0	D6017115P	Crosstube Material
-----	-----------	--------------------

**Comment:** Qty.: 1.0000 Each(s)/Unit Total : 66.0000 Each(s)

Crosstube Material

3.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------

**Comment:** PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure material certification is attached

6/9/7

4.0	QC6	DIMENSIONAL CHECK
-----	-----	-------------------

**Comment:** DIMENSIONAL CHECK

MS 06/09/13

5.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------

**Comment:** PACKAGING RESOURCE #1

Identify and Stock

Location:

06/09/13

(65)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☐ No ☒ DQA: DD Date: 06/09/14
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 6/9/2006 11:32:27 AM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE MATERIAL

Job Number: 27471

Part Number: D6017115

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

DC

DOCUMENT CONTROL



66

Comment: DOCUMENT CONTROL

Inspection Level 21

2006/09/14

Job Completion



ie 860913

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

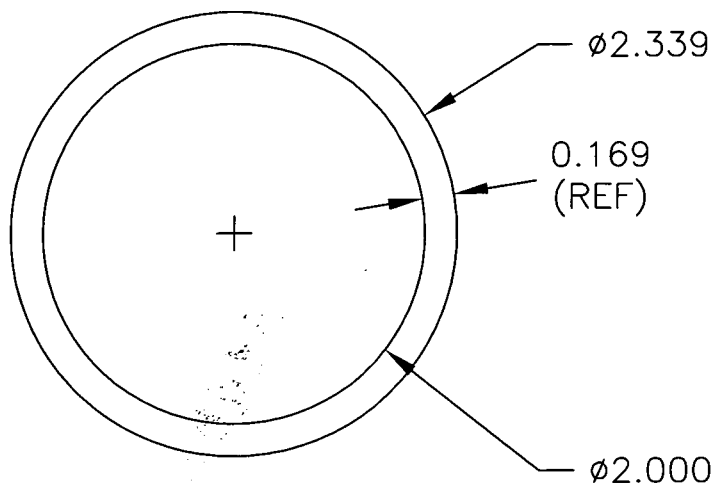
NOTE: Date & initial all entries

PRELIMINARY ISSUE

06.05.31

DESIGN QP	DRAWN BY QP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D6017	REV. A SHEET 1 OF 1
DATE 06.05.31		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	06.05.31	NEW ISSUE	

SPECIFICATION CONTROL DRAWING



NOTES

- 1) D6017-XXX CROSSTUBE
 |
 LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 115" LONG TUBE: D6017-115

- 2) MATERIAL: AISI 4130 (AMS 6371) SEAMLESS STEEL TUBE
2.339 OD x 2.000 ID
NORMALIZED & ANNEALED
- 3) TOLERANCES ARE PER ASTM A519 AS FOLLOWS:
O.D.: +0.007/-0.000
I.D.: +0.000/-0.007
LENGTH: XXX +0.188/-0.000
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

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MICHIGAN
seamless tube

TEST REPORT

SHIPMENT

7300

MICHIGAN SEAMLESS TUBE

SOUTH LYON, MICHIGAN 48178

001

ORDER NUMBER	CUSTOMER ORDER NUMBER	DATE	OFC	COM	DI WI	NET SLS	GR SLS	ACCOUNT NUMBER	US	PAGE
024561	061206JOE	06/14/06	22	00	15	16	01	02598001FCO	1DR	1

FACTORY STEEL & METAL SUPPLY 14020 OAKLAND DETROIT MI 48203	S H I P T O FACTORY STEEL & METAL SUPPLY 14020 OAKLAND AVENUE DETROIT MI 48203	SN 2 TR 3 INV 3
---	--	-----------------------

ROUTING

OPEN TOP/FULLY TARPED/FOB SOUTH LYON MI

PPD TRUCK

ANALYSIS	SHAPE	PRODUCT	FC	ANNEAL	REQUESTED
4130	ROUND	COLD DRAWN		PER SPEC	08/25/06
SPECIFICATION		CMST	DESCRIPTION		PROMISE
SEAMLESS		AMS6371/A519	CD ALLOY AIRCRAFT		08/25/06

SPECIAL INSTRUCTIONS

80M PSI MIN YLD, AIM 90 PSI, CERT TO A519-96, MILT-6736BN NOTE-2
AMS-6360K W/DECARB LEVELS TO AMS-6371J, AMS-T-6736AN, 4130H&AMS-
2301J. PRODUCE FROM 1-HT. MARK TO INCL GRADE, A519-96, MILT-6736BN,
NOTE-2, AMS-T6736AN, AMS-6371J, AMS6360K&4130H. MAT'L TO BE BOXED.
OIL OD SURFACE CRITICAL. CIRCUMFERENTIAL GRIND MARKS UNACCEPTABLE

ITEM	QUANTITY	O.D.	I.D.	WALL	LENGTH	WT/FT	WEIGHT
		2.339	2.000			3.938	13:23:04 08/25/06

ITM	BALE	--BALE--	ITM	PART
NUM	NUM	PCS	STATUS	NUMBER
1	1 W	66	CUT	9' 7.000" COM

D6017115

HEAT NO.	C	Mn	P	S	Si	Ni	Cr	Mo	Cu	Al	REMARKS
00A062753	.290	.530	.012	.017	.270	.070	1.040	.1	.150	.023	EP SD1

HEAT NO.	ULT. STR. PSI	YIELD, PSI	% ELONG 2"	HARDNESS	HYDRO TEST PSI	ULTRA SONIC %	EDDY CURRENT	EXPANSION	
00A062753	124,220	105,954	21.9	BHN 241-248			OK		
					BEND	FLATTEN	FLARE	REV. FLATTEN	FLANGE

DECARB OK GRAIN SIZE 7
FREQ 0.01 SEV 0.01
MACROS S1, R1, C2
J1 J2 J3 J4 J5 J6 J7 J8 J9 J10
50 50 48 44 40 35 34 32 31 29
MELTED MANUFACTURED IN USA

We hereby certify that the reported data are correct
according to Michigan Seamless Tube tests and
those of its suppliers.